

RIVATEC

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RIVATEC

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Rivatec, a brand under Group Riva, specializes in industrial water treatment systems and provides services to over 54 countries. These include Morocco, Tunisia, Ethiopia, Albania, France, Afghanistan, the United States, Cameroon, South Africa, Mali, Togo, Botswana, Namibia, Syria, Bulgaria, Iraq, and Türkiye. Rivatec closely monitors emerging technologies and offers comprehensive turnkey installation services for its commercial and industrial water treatment systems. Its headquarters and production facility are located in Ankara, Türkiye, with a global technical service network and presence in various countries. Its headquarters and production facility are located in Ankara, Türkiye, and it has established a global technical service network with partners in countries such as Belarus, the United Arab Emirates (UAE), Morocco, Tunisia, Ethiopia, Botswana, France, South Africa, Bulgaria, and Namibia.

Since entering the international market, Rivatec has engaged in numerous worldwide projects in industrial water treatment. The company is dedicated to maximizing customer satisfaction by offering project consultancy, spare parts, consumables, equipment support, 24/7 technical assistance, and after-sales service. Rivatec's solutions are designed to address water scarcity and environmental challenges, tailored specifically for industrial sectors.



INDUSTRIAL & COMMERCIAL WATER TREATMENT SYSTEMS

Industrial & commercial water treatment systems play a crucial role in modern manufacturing, processing, and agricultural sectors. At Rivatec, our expertise in designing and deploying state-of-the-art water treatment systems enables industries to manage water resources efficiently while aligning with environmental and regulatory standards.



Aside from the importance of drinking water, water is a fundamental resource across a wide range of industries, from food and beverage production to chemical manufacturing and agriculture. However, untreated water often contains impurities, minerals, and microbial contaminants that can interfere with production processes, damage equipment, or compromise product quality. As industries become increasingly aware of the importance of sustainable resource management, industrial water treatment systems have become indispensable for operational efficiency, regulatory compliance, and environmental protection.

Rivatec provides a range of solutions tailored to meet the diverse needs of industries requiring specialized water treatment. Our systems are designed with flexibility, allowing customization for various applications including:

Filtration Systems

Membrane Technologies

- Reverse osmosis (RO)
- Ultrafiltration (UF)
- Nanofiltration (NF)
- Microfiltration (MF)

River Water Treatment

Sea Water Desalination

Well (Bore) Water Treatment

Electrodeionization (EDI)

Ion Exchange & Softening Systems

Disinfection Systems

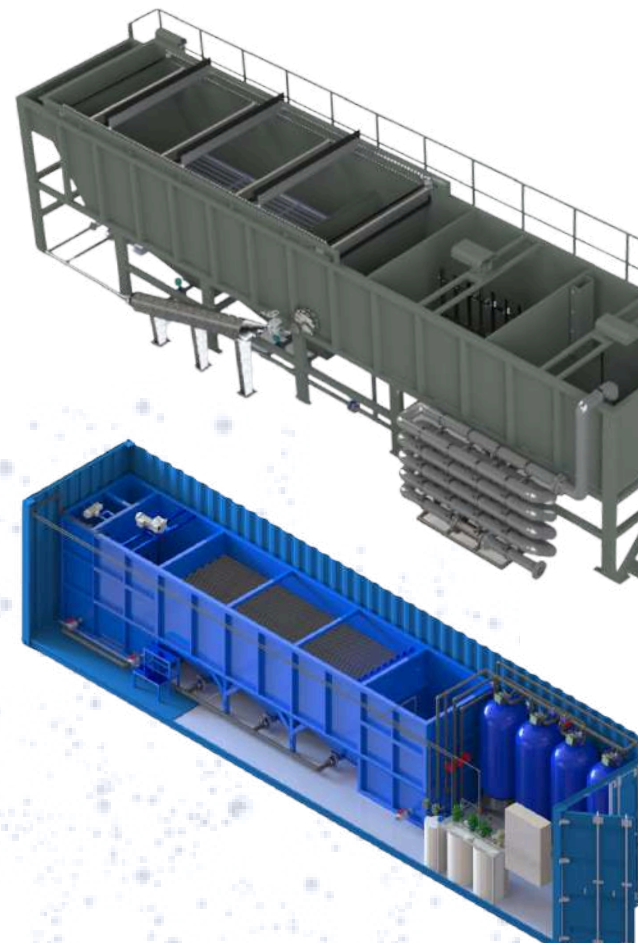
Wastewater Treatment and Recovery

- Sequencing Batch Reactor (SBR)
- Moving Bed Bioreactor (MBBR)
- Membrane Bioreactor (MBR)

Gray water and Rain Water Treatment

Textile Water & Wastewater Treatment and Recovery

Irrigation Water



FILTRATION SYSTEMS

Filtration is a fundamental treatment process that physically removes suspended solids and organic pollutants from water. Filtration systems enhance water quality in diverse applications, including drinking water production, industrial processes, and wastewater treatment, through the utilization of various technologies. Mechanical filtration captures larger particles, while activated carbon filtration adsorbs organic compounds and chemicals such as chlorine. Reverse osmosis (RO) employs membrane technology to eliminate salts, microorganisms, and other dissolved impurities. Ion exchange removes ions, such as hardness minerals, through a controlled substitution process. To ensure microbiological safety, ultraviolet sterilization, chlorine dosing, ozonation and membrane filtration techniques are integrated. Each technology is meticulously tailored to address specific treatment objectives and is indispensable in attaining the desired level of water purity.



MEMBRANE TECHNOLOGY



Membrane technology is based on the principle of physically separating dissolved or suspended contaminants from water through a selective barrier. Membranes, with pore sizes down to the nanometer scale, enable effective removal of both particles and dissolved substances. When water is pressurized on one side of the membrane, only water molecules and smaller particles pass through, while unwanted ions, microorganisms, and other contaminants are retained on the surface.

Key advantages of membrane technology include:

- **Sustainability:** Minimal chemical usage and low energy requirements reduce harmful waste generation, making it environmentally friendly.
- **High Filtration Quality:** Membranes capable of nanometer-level filtration effectively remove dissolved salts, heavy metals, bacteria, and viruses.
- **Flexible Applications:** Suitable for treating seawater, groundwater, and industrial wastewater, supporting a wide range of uses from drinking water supply to industrial water recovery.
- **Efficiency and Water Recovery:** High recovery rates and minimal water loss enhance process efficiency.

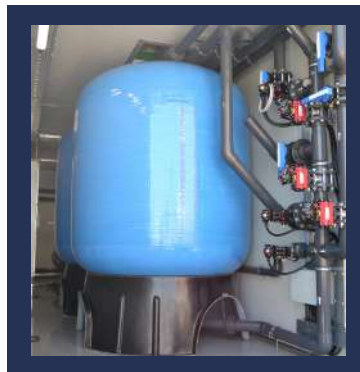
The main categories within membrane technology include microfiltration (MF), ultrafiltration (UF), nanofiltration (NF), and reverse osmosis (RO). Microfiltration is generally used for separating suspended solids, while UF removes larger molecules and colloids. NF and RO operate at higher pressures to remove ions, dissolved organics, and finer contaminants, with RO being particularly effective for desalination and applications requiring high-purity water.

This versatility and efficiency make membrane technology a critical solution for improving water quality and environmental sustainability across applications, from potable water purification to advanced industrial processes.

WATER SOFTENING SYSTEMS

Water softening systems effectively reduce water hardness by eliminating calcium (Ca^{2+}) and magnesium (Mg^{2+}) ions through an ion exchange process. These dissolved hardness ions contribute to the formation of scale deposits in industrial systems, resulting in diminished equipment efficiency, elevated energy consumption, and increased maintenance expenses.

In water softening systems, resins replace calcium and magnesium ions in the water with sodium ions (Na^+). This process employs specially designed, high-capacity resins. Over time, the resin becomes saturated and is regenerated using a brine solution, restoring its effectiveness and enabling continuous operation.



These systems are widely used in various applications, from drinking water treatment to industrial processes. They are particularly beneficial for boiler feed water preparation, cooling towers, laundries, and other industrial uses.

Water softeners provide an effective solution for softening high-hardness water, enhancing system performance, reducing maintenance costs, and promoting energy efficiency.

DISINFECTION SYSTEMS

Disinfection systems are critical for ensuring water safety and quality across various applications, utilizing methods such as chlorination, ultraviolet (UV) light, ozonation, and advanced oxidation processes (AOP). Chlorination effectively eliminates pathogens, while UV disinfection inactivates microorganisms by damaging their DNA without using chemicals, making it environmentally friendly. Ozonation generates ozone on-site to disinfect water efficiently, and AOP combines ozone, hydrogen peroxide, and UV light to degrade organic pollutants and disinfect. These systems ensure pathogen removal, offer chemical-free alternatives, and are suitable for diverse applications including municipal water treatment, food and beverage processing, and pharmaceuticals. Overall, disinfection systems play a vital role in maintaining microbiological safety and enhancing water quality.



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WASTE WATER TREATMENT SYSTEMS

Wastewater treatment systems are designed to make polluted water safe for reuse or environmentally safe discharge through three main processes: physical, chemical, and biological treatment.

PHYSICAL TREATMENT

In this initial stage, large suspended solids and particles are separated from the water using physical methods. Processes such as sedimentation, filtration, and screening remove large contaminants and sediments. Physical treatment prepares the water for further purification steps.



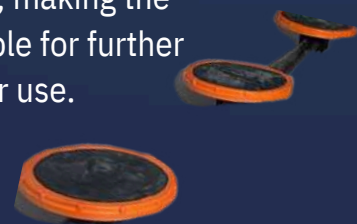
BIOLOGICAL TREATMENT

Biological treatment uses microorganisms to breakdown organic waste, rendering it harmless. Through aerobic, anaerobic and anoxic processes, bacteria and other organisms decompose organic contaminants in the water. This stage is widely used in domestic wastewater treatment and plays an essential role in environmental sustainability.



CHEMICAL TREATMENT

Chemical treatment addresses dissolved pollutants and organic materials in the water. Processes like coagulation and flocculation bind dissolved particles together, which then settle and are removed. Disinfection steps, such as chlorination and ozonation, eliminate pathogens. This stage is particularly effective for industrial wastewater, making the water suitable for further treatment or use.



TREATMENT OF NATURAL WATER RESOURCES

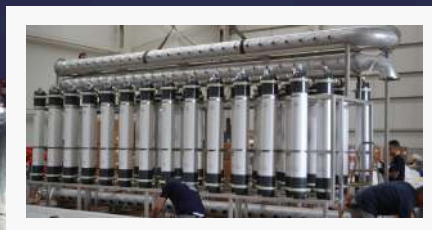
RIVER WATER TREATMENT SYSTEMS

River water treatment systems are designed to obtain drinking and utility water from streams such as creeks and rivers. These systems obtain clean water by removing contaminants, particles and microorganisms contained in the water. While purification is carried out in accordance with high quality standards for drinking water, lower quality standards can be provided for other uses. These systems have a wide range of uses from military facilities to remote areas and are important in terms of protecting water resources and providing clean water supply.



SEAWATER TREATMENT SYSTEMS

Seawater desalination systems are technologies specifically designed to convert seawater into drinking and utility water. They are widely used in areas where water resources are limited, especially in island countries and coastal areas. These systems, which operate with reverse osmosis technology, remove salt and other contaminants by passing water through a special membrane under high pressure. They then disinfect the water to meet drinking water standards. These systems play a critical role in protecting water resources and ensuring clean water supply, and they offer an important solution in areas experiencing water shortages.



WELL WATER TREATMENT SYSTEMS

Well water treatment systems provide the cleaning of water coming from underground water sources for drinking and utility water. These systems include steps such as mechanical filtration of water, disinfection, removal of salt, removal of organic pollutants and provision of mineral balance. As a result, well water treatment systems process well water to obtain healthy and safe drinking water.



MOBILE SYSTEMS

ON-BOARD SYSTEMS

Mobile drinking and utility water treatment systems are designed for temporary needs and offer fast and flexible solutions that comply with TS 266, WHO and other international drinking water standards. These systems are used to provide safe drinking water in temporary settlements such as emergencies, disasters, military operations and camp areas. They include units such as pre-treatment, disinfection, activated carbon filtration, reverse osmosis, and mineral balance. While water production capacities vary between 100 and 10,000 liters/hour independent of the source of feed water.



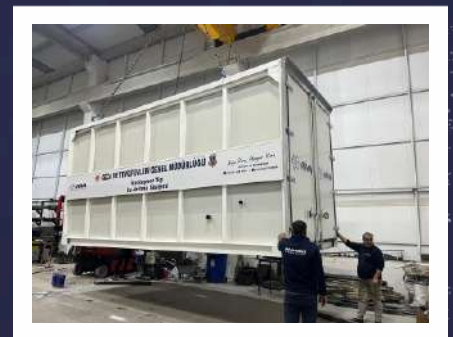
TRAILER SYSTEMS

Trailer type water treatment systems are portable and offer fast installation. They are widely used in emergencies, natural disasters, military operations, etc. As a pioneer in mobile water treatment systems, their water production capacities vary between 300-120,000 lt/h per trailer and comply with drinking water standards. Their features include chemical dosing system, filtration systems, reverse osmosis system and ultraviolet disinfection system. While reliability is ensured with earthquake-resistant piping, clean drinking water is obtained by increasing the quality of water with their portable structures.



CONTAINERIZED SYSTEMS

Containerized water treatment systems adapt to different areas of use with a wide range of water production capacities ranging from 1,000 to 120,000 liters/hour per container. These solutions are designed to be used in various environments such as emergencies, military camps, campsites and construction sites. The systems provide reliable drinking water by quickly purifying large amounts of water. In addition, they operate in accordance with all international drinking water standards, which ensures the safety and quality of water.



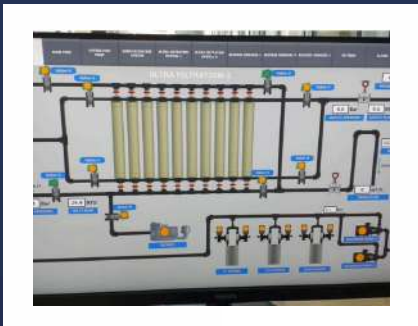
INDUSTRIAL SECTOR TREATMENT

GRAY & RAIN WATER TREATMENT

Graywater and rainwater treatment systems offer effective solutions for reusing and conserving water resources, providing significant benefits in both residential and commercial settings.

- **Graywater Treatment:** Graywater, or wastewater from showers, sinks, and washing machines, can be treated and reused for non-potable purposes like irrigation, flushing toilets, or industrial processes. Through filtration, biological treatment, and disinfection, graywater is effectively purified, reducing fresh water demand and contributing to sustainable water use.
- **Rainwater Treatment:** Rainwater harvesting systems collect and treat rainwater, making it suitable for various applications. Collected rainwater passes through filtration and disinfection stages to remove debris, pathogens, and pollutants, producing clean water that can be used for landscaping, cleaning, and even some industrial needs.

Graywater and rainwater treatment systems support water conservation efforts by providing efficient and eco-friendly solutions for reusing water in ways that reduce environmental impact and promote resource sustainability.



INDUSTRIAL SECTOR TREATMENT

TEXTILE WWTP & RECOVERY

Textile wastewater treatment systems are essential for managing and purifying the large volumes of wastewater produced by the textile industry, ensuring compliance with environmental standards and supporting sustainable production practices. These systems incorporate a variety of advanced technologies to treat and recycle water effectively, addressing the specific contaminants common in textile processes.

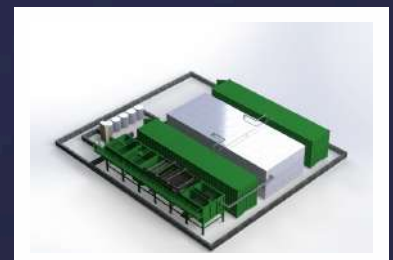
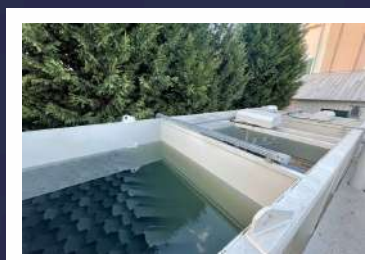
Physical Treatment: In this initial phase, processes like screening and sedimentation are used to remove larger particles and suspended solids. This step prepares the water for further chemical and biological treatments, enhancing efficiency in subsequent processes.

Chemical Treatment: To neutralize chemicals and dyes commonly found in textile wastewater, advanced coagulation, flocculation, and pH adjustment processes are applied. This stage breaks down dissolved pollutants, allowing for their removal while making the water safer for potential reuse.

Biological Treatment: Leveraging microbial processes, biological treatment effectively decomposes organic materials in wastewater. Aerobic and anaerobic systems target complex organic compounds, reducing biological oxygen demand (BOD) and chemical oxygen demand (COD) levels, ensuring that the treated water meets environmental discharge standards.

Advanced Filtration and Membrane Systems: Membrane technologies like ultrafiltration (UF), nanofiltration (NF), and reverse osmosis (RO) further purify the water by removing smaller contaminants and dissolved salts. These systems are highly effective for reclaiming water that can be reused in textile processes, reducing water consumption and operational costs.

With these multi-stage treatment processes, textile wastewater treatment systems provide efficient and eco-friendly solutions for wastewater management, enabling textile facilities to reduce their environmental impact, enhance water recycling, and contribute to a more sustainable industry.



INDUSTRIAL SECTOR TREATMENT

HYDROPONIC GREENHOUSE WATER TREATMENT

Hydroponic greenhouse water treatment systems are designed to meet the unique needs of hydroponic and aquaponic agriculture, where plants grow in nutrient-rich water instead of soil. These systems ensure that the water used is free from contaminants, providing an optimal environment for healthy plant growth and maximizing crop yield.

By utilizing advanced filtration, reverse osmosis, and disinfection processes, these systems remove impurities, balance nutrient levels, and prevent harmful pathogens from affecting crops.

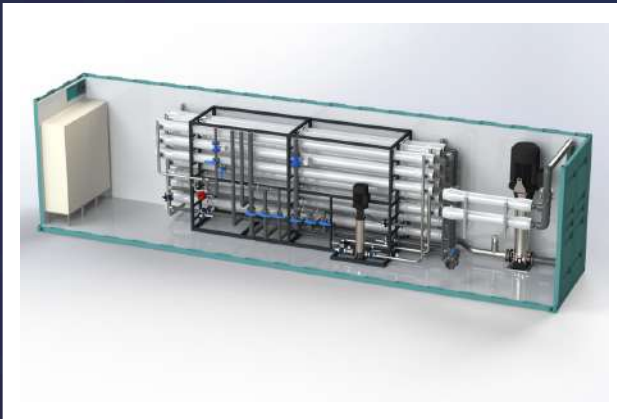
Key technologies include:

- **Filtration:** Removes suspended solids and particulates to prevent clogging and promote efficient water circulation.
- **Reverse Osmosis (RO):** Reduces dissolved salts and other unwanted ions, ensuring the water has the ideal nutrient composition for plant uptake.
- **Disinfection:** UV or ozone treatments eliminate bacteria, fungi, and other pathogens, safeguarding the health of plants.

These water treatment systems play a crucial role in sustainable greenhouse production, allowing for precise control over water quality, reduced resource usage, and enhanced crop health in soilless agriculture.



SAMPLE PROJECTS



SAMPLE PROJECTS



Factory



HQ

International Dealers



UAE



FRANCE



BULGARIA



NAMIBIA



BELARUS



BOTSWANA



TUNISIA



MOROCCO



ETHIOPIA



SOUTH AFRICA



RUSSIA



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